



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,157	06/19/2003	Madhavi W. Chandra	CISCP326/247013	5810
22434	7590	10/15/2010		
Weaver Austin Villeneuve & Sampson LLP			EXAMINER	
P.O. BOX 70250			PATEL, CHIRAG R	
OAKLAND, CA 94612-0250				
			ART UNIT	PAPER NUMBER
			2454	
			NOTIFICATION DATE	DELIVERY MODE
			10/15/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@wavsip.com

Office Action Summary

Application No.

10/600,157

Applicant(s)

CHANDRA ET AL.

Examiner

CHIRAG PATEL

Art Unit

2454

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 5, 9, 10, 12-23, 25, 27, 31-35, 37 and 39-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 5, 9-10, 12-23, 25, 27, 31-35, 37, and 39-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Drafts/Person's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Response to Arguments

Applicant's arguments filed August 6, 2010 have been fully considered but they are not persuasive.

Applicants argue that the cited prior art fails to disclose separately or in combination, "wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network" and that Raman fails to disclose or suggest the BAAA acting as a proxy for the purposes of sending a halt indication to the PDSN within the context of releasing resources associated with a PPP session.

Examiner points to Chowdhury as sending a disconnect request from a HAAA equated as a second AAA server to the PDSN per Figure2: item 226. Raman was relied upon to disclose the BAAA acting a proxy between the PDSN and the HAAA per [0251], "PDSN 178 is in communication with BAAA 201, which in turn may be in communication with a HAA 191". Examiner has relied on the combination of both the references to teach the claimed limitations. Chowdhury discloses a PPP session per [0044], "The MS starts the PPP establishment procedure (PPP negotiation as is know to one of average skill in the art) with new PDSN 408."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 5, 9-10, 12-17, and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borella (US 7,346,684) in view of Chowdhury (US 2004/0022212) / Raman et al. – hereinafter Raman (US 2004/0018829).

As per claim 1, Borella discloses in a Packet Data Serving Node (PDSN), a method of releasing resources, comprising

sending by the PDSN an access request message to a first AAA server for authentication of a node; (Col 22 lines 37-58; PDSN 232 queries the AAA server 1102 for the authentication data of the mobile node 210), wherein the node is a mobile node supporting Mobile IP (Col 5 line 50 – Col 6 line 11; network architecture suitable for application in a system for selecting foreign agents for mobile nodes in a mobile IP network)

receiving by the PDSN an access accept message from the first AAA server; (Col 22 lines 37-58; PDSN 232 receives the authentication data of the mobile node 210 from the AAA server 1102)

establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server; (Col 22 lines 37-58; 232 may initiate PAP/CHAP negotiations 1216 with the mobile node 210 to establish a communication link between the mobile node 210 and the PDSN 232)

storing by the PDSN information associated with the node in resources associated with the PDSN; (Col 6 line 56-Col 7 line 7; Col 22 lines 59 – Col 23 line 10)

Borella fails to disclose receiving by the PDSN a disconnect request message from the first AAA server prior to expiration of a PPP timer; wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network; wherein the second AAA server is a home AAA server associated with a home network of the node, and releasing by the PDSN the resources when the disconnect request message is received, wherein the resources are released independent of expiration of a PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

Chowdhury discloses receiving by the PDSN a disconnect request message from the first AAA server; ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) prior to the expiration of a PPP timer ([0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer) and releasing by the PDSN

the resources when the disconnect request message is received, ([0048]; [0052];
Figure 7: item 706)

wherein the resources are released independent of expiration of a PPP session timer; ([0033]; FIG. 2 generally illustrates a solution that takes advantage of an AAA server's knowledge of the current PDSN (NAS address) for a mobile user (network access identifier [NAI]); [0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer.)

wherein the resources comprise memory ([0050]) and the information comprises PPP information associated with a PPP session. ([0052]; PPP connection)

Raman discloses wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network([0251], "PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191", Figure 2: item 226) wherein the second AAA server is a home AAA server associated with a home network of the node ([0251], HAAA 191)

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Borella to disclose receiving by the PDSN a disconnect request message from the first AAA server prior to expiration of a PPP timer; wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server

associated with a foreign network; wherein the second AAA server is a home AAA server associated with a home network of the node, and releasing by the PDSN the resources when the disconnect request message is received, wherein the resources are released independent of expiration of a PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session. The motivation would have been to reduce the sheer waste of resources and may possibly degrade network capacity when the CDMA2000 networks grow. (Chowdhury, [0033]) and to replenish used credit and purchase new credits for prepaid services by the PDSN. (Raman, [0270])

As per claim 5, Borella / Chowdhury / Raman disclose the method as recited in claim 1. Borella discloses wherein the information is associated with the Mobile IP session. (Col 1 lines 7-11)

As per claim 9, Borella / Chowdhury / Raman disclose the method as recited in claim 3. Raman discloses the method as recited in claim 3, wherein the access request message and access reply message are RADIUS messages, and the first and second AAA servers are RADIUS servers. ([0245])

As per claim 10, Borella / Chowdhury / Raman disclose the method as recited in claim 1, and Chowdhury wherein the disconnect request message comprises a source

PDSN identifier identifying the first PDSN, ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

a username identifier identifying a user associated with the Mobile IP session, ([0033]; mobile user network access identifier [NA1]),and a session identifier identifying a session associated with the user to be terminated by the first PDSN. ([0042] : The token is an identifier for the session established by the NAI) wherein the session is a PPP session. ([0052]; PPP connection)

As per claim 12, Borella / Chowdhury / Raman disclose the method as recited in claim 1. Raman discloses wherein the disconnect request message is triggered by a second access request message sent to the second AAA server ([0266]) by a second PDSN to which the node has roamed. ([0233])

As per claim 13, Borella / Chowdhury / Raman disclose the method as recited in claim 12. Chowdhury discloses wherein the disconnect request message is sent after an accept message is sent by the second AAA server to the first AAA server. ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226)

As per claim 14, Borella / Chowdhury / Raman disclose the method as recited in claim 12. Chowdhury discloses wherein the access request message and the second

access request message each comprise a RADIUS access request message ([0050]) including a username identifier identifying a user associated with the Mobile IP session, ([0033]; mobile user network access identifier [NA1])) a session identifier identifying a session associated with the user, ([0042] : The token is an identifier for the session established by the NAI) and a PDSN identifier identifying the PDSN. ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

As per claim 15, Borella / Chowdhury / Raman disclose the method as recited in claim 1. Chowdhury discloses the method as recited in claim 27, further comprising: receiving by the AAA server a disconnect acknowledgement message from the first PDSN indicating that the first PDSN has successfully disconnected the user. ([0053]; Figure 7: item 708)

As per claim 16, Borella / Chowdhury / Raman disclose the method as recited in claim 15. Chowdhury discloses wherein the disconnect acknowledgement message is sent to the first AAA server. ([0053]; Figure 7: item 708)

As per claim 17, Borella / Chowdhury / Raman disclose the method of claim 1. Chowdhury discloses further comprising: sending by the PDSN a disconnect acknowledgement message to the second AAA server, the disconnect

acknowledgement message indicating that the PDSN has successfully disconnected the user. ([0053])

As per claim 42, Borrella discloses a non-transitory computer-readable medium storing thereon computer-readable instructions for releasing resources in a Packet Data Serving Node (PDSN), comprising:

computer-readable instructions for sending by the PDSN an access request message to a first AAA server for authentication of a node, (Col 22 lines 37-58; PDSN 232 queries the AAA server 1102 for the authentication data of the mobile node 210) wherein the node is a Mobile Node supporting Mobile IP; (Col 5 line 50 – Col 6 line 11; network architecture suitable for application in a system for selecting foreign agents for mobile nodes in a mobile IP network)

computer-readable instructions for establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server; (Col 22 lines 37-58; 232 may initiate PAP/CHAP negotiations 1216 with the mobile node 210 to establish a communication link between the mobile node 210 and the PDSN 232)

computer-readable instructions for storing by the PDSN information associated with the node in resources associated with the PDSN; and (Col 6 line 56-Col 7 line 7; Col 22 lines 59 – Col 23 line 10)

computer-readable instructions for releasing by the PDSN the resources when a disconnect request message is received from the first AAA server, ([0048]; [0052];

Figure 7: item 706)

Borella fails to disclose wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session such that the resources are released prior to expiration of the PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

Chowdhury discloses wherein the disconnect request message is received by the PDSN ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session such that the resources are released prior to expiration of the PPP session timer; ([0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a

registration timer) and releasing by the PDSN the resources when the disconnect request message is received, ([0048]; [0052]; Figure 7: item 706)

wherein the resources comprise memory ([0050]) and the information comprises PPP information associated with a PPP session. ([0052]; PPP connection)

Raman discloses wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, ([0251], "PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191", Figure 2: item 226) wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node, ([0251], HAAA 191)

At the time the invention was made, it would have obvious to modify Borella to disclose wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session such that the resources are released prior to expiration of the PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session. The motivation would have been to reduce the sheer waste of resources and may possibly degrade network capacity when the

CDMA2000 networks grow. (Chowdhury, [0033]) and to replenish used credit and purchase new credits for prepaid services by the PDSN. (Raman, [0270])

As per claim 43, Borella discloses a Packet Data Serving Node (PDSN) adapted for releasing resources, comprising:

means for sending by the PDSN an access request message to a first AAA server for authentication of a node, (Col 22 lines 37-58; PDSN 232 queries the AAA server 1102 for the authentication data of the mobile node 210) wherein the node is a Mobile Node supporting Mobile IP; (Col 5 line 50 – Col 6 line 11; network architecture suitable for application in a system for selecting foreign agents for mobile nodes in a mobile IP network)

means for receiving by the PDSN an access accept message from the first AAA server; (Col 22 lines 37-58; Once the PDSN 232 receives the authentication data of the mobile node 210 from the AAA server 1102)

means for establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server; (Col 22 lines 37-58; 232 may initiate PAP/CHAP negotiations 1216 with the mobile node 210 to establish a communication link between the mobile node 210 and the PDSN 232)

means for storing by the PDSN information associated with the node in resources associated with the PDSN; (Col 6 line 56-Col 7 line 7; Col 22 lines 59 – Col 23 line 10)

Borella fails to disclose means for receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; and means for releasing by the PDSN the resources associated with the PPP session when the disconnect request message is received such that the resources are released independent of whether the PPP session timer has expired and prior to expiration of the PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

Chowdhury discloses means for receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session, ([0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer) means for releasing by the PDSN the resources associated with the PPP

session when the disconnect request message is received such that the resources are released independent of whether the PPP session timer has expired and prior to expiration of the PPP session timer; ([0048]; [0052]; Figure 7: item 706)

wherein the resources comprise memory ([0050]) and the information comprises PPP information associated with a PPP session ([0052]; PPP connection)

Raman discloses a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, ([0251], "PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191", Figure 2: item 226) wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; ([0251], HAAA 191)

At the time the invention was made, it would have obvious to modify Borella to disclose means for receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is received prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node; and means for releasing by the PDSN the resources associated with the PPP session when the

disconnect request message is received such that the resources are released independent of whether the PPP session timer has expired and prior to expiration of the PPP session timer; wherein the resources comprise memory. The motivation would have been to reduce the sheer waste of resources and may possibly degrade network capacity when the CDMA2000 networks grow. (Chowdhury, [0033]) and to replenish used credit and purchase new credits for prepaid services by the PDSN. (Raman, [0270])

As per claim 44, Borella discloses a Packet Data Serving Node (PDSN) adapted for releasing resources, comprising:

a processor; and (Col 26 line 49-Col 27 line 14; a processor)

a memory, at least one of the processor or the memory being adapted for: (Col 26 line 49-Col 27 line 14; computer memory)

sending by the PDSN an access request message to a first AAA server for authentication of a node, (Col 22 lines 37-58; PDSN 232 queries the AAA server 1102 for the authentication data of the mobile node 210) wherein the node is a Mobile Node supporting Mobile IP; (Col 5 line 50 – Col 6 line 11; network architecture suitable for application in a system for selecting foreign agents for mobile nodes in a mobile IP network)

receiving by the PDSN an access accept message from the first AAA server; Col 22 lines 37-58; Once the PDSN 232 receives the authentication data of the mobile node 210 from the AAA server 1102)

establishing by the PDSN a Mobile IP session as a Foreign Agent for the node when an access accept message is received from the first AAA server; ((Col 22 lines 37-58; 232 may initiate PAP/CHAP negotiations 1216 with the mobile node 210 to establish a communication link between the mobile node 210 and the PDSN 232)

storing by the PDSN information associated with the node in resources associated with the PDSN; (Col 6 line 56-Col 7 line 7; Col 22 lines 59 – Col 23 line 10)

Borella fails to disclose receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is sent to the PDSN prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session; and releasing by the PDSN the resources in which the information has been stored when the disconnect request message is received such that the resources are released prior to expiration of the PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session.

Chowdhury discloses receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN ([0013]; a disconnect

request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) the disconnect request message triggering the release of resources associated with a PPP session; and releasing by the PDSN the resources in which the information has been stored when the disconnect request message is received such that the resources are released prior to expiration of the PPP session timer ([0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer, [0048]; [0052]; Figure 7: item 706)

wherein the resources comprise memory ([0050]) and the information comprises PPP information associated with a PPP session ([0052]; PPP connection)

Raman discloses PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network. ([0251], PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191, Figure 2: item 226)

At the time the invention was made, it would have obvious to modify Borella to disclose receiving by the PDSN a disconnect request message, wherein the disconnect request message is received by the PDSN from a second AAA server via the first AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the disconnect request message is sent to the PDSN prior to

expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with a PPP session; and releasing by the PDSN the resources in which the information has been stored when the disconnect request message is received such that the resources are released prior to expiration of the PPP session timer; wherein the resources comprise memory and the information comprises PPP information associated with a PPP session. The motivation would have been to reduce the sheer waste of resources and may possibly degrade network capacity when the CDMA2000 networks grow. (Chowdhury, [0033]) and to replenish used credit and purchase new credits for prepaid services by the PDSN. (Raman, [0270])

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Borella (US 7,346,684) / Chowdhury (US 2004/0022212) /Raman (US 2004/0018829) further in view of Jones et al. – hereinafter Jones (US 7,441,269).

As per claim 18, Borella / Chowdhury / Raman disclose the method as recited in claim 1. Borella fails to disclose further comprising: sending by the PDSN a disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user. Jones discloses further comprising: sending by the PDSN a disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user. (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) At the time the

invention was made, it would have been obvious to a person of ordinary skill in the art to modify Borella to disclose further comprising: sending by the PDSN a disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user.. The motivation for doing do would have been to trigger the generation of the appropriate accounting records and/or termination of a stale data session. (Col 3 lines 11-20)

As per claim 19, Borella/ Chowdhury / Raman / Jones disclose the method as recited in claim 18. Raman discloses wherein the disconnect non-acknowledgement message is sent to the first AAA server. ([0251]; In turn, the RAN 183 may be in communication with PDSN 178. PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191)

As per claim 20, Borella / Chowdhury / Raman disclose the method as recited in claim 1. Borella fails to disclose further comprising: sending by the PDSN a disconnect non-acknowledgement message to the second AAA server, the disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user. Jones discloses the disconnect non-acknowledgement message indicating that the PDSN is unable to disconnect the user. (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) Raman discloses sending a message to the second AAA server. ([0251]; In turn, the RAN 183 may be in communication with PDSN 178. PDSN

178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191)

Claims 21-25, 27, 45-46 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chowdhury et al. – hereinafter Chowdhury (US 2004/0022212) in view of Jones et al. – hereinafter Jones (US 7,441,269).

As per claim 21, Chowdhury discloses In a AAA server, a method of initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

receiving by the AAA server an access request message from a second PDSN, ([0035]; Figure 2: item 216) the access request message including a username identifier identifying a user, ([0033]; mobile user network access identifier [NA1]) of a Mobile Node supporting Mobile IP ([0013]; mobile station initially registered with the old NAS to establish the mobile IP session), a session identifier identifying a session associated with the user, ([0042] : The token is an identifier for the session established by the NAI) and a PDSN identifier identifying the first PDSN; ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration) wherein the AAA server is a home AAA server associated with a home network of the user ([0054]; home authentication, authorization, and accounting (HAAA) server)

sending by the AAA server an access accept message to the second PDSN in response to the access request message; and ([0037]; Figure 2: item 224)

sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session, ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) thereby enabling the first PDSN to release the resources prior to expiration of a PPP session timer; ([0033]; FIG. 2 generally illustrates a solution that takes advantage of an AAA server's knowledge of the current PDSN (NAS address) for a mobile user (network access identifier [NAI]); [0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer.)

wherein the resources comprise memory ([0050]) and wherein the session is a PPP session. ([0052]; PPP connection)

Chowdhury fails to disclose receiving by the AAA server a disconnect non-acknowledgment message from the first PDSN indicating that the first PDSN is unable to disconnect the user and release the resources associated with the session. Jones discloses receiving by the AAA server a disconnect non-acknowledgment message from the first PDSN indicating that the first PDSN is unable to disconnect the user and release the resources associated with the session (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) At the time the invention was made, it would have

been obvious to a person of ordinary skill in the art to modify Chowdhury to disclose receiving by the AAA server a disconnect non-acknowledgment message from the first PDSN indicating that the first PDSN is unable to disconnect the user and release the resources associated with the session. The motivation for doing so would have been to trigger the generation of the appropriate accounting records and/or termination of a stale data session. (Col 3 lines 11-20)

As per claim 22, Chowdhury / Jones disclose the method as recited in claim 21, and Chowdhury discloses wherein the disconnect request message further indicates that the resources associated with the session are no longer needed. ([0038])

As per claim 23, Chowdhury / Jones disclose the method as recited in claim 21, and Chowdhury discloses wherein the disconnect request message further indicates that a node associated with the user has moved. ([0038])

As per claim 25, Chowdhury / Jones disclose the method as recited in claim 21, and Chowdhury discloses wherein the disconnect request message requests that the first PDSN disconnect the user for the session identified by the session identifier. ([0052]; Figure 7: item 706)

As per claim 27, Chowdhury / Jones disclose the method as recited in claim 21, and Chowdhury discloses wherein the disconnect request message comprises a

source PDSN identifier identifying the first PDSN, ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

a username identifier identifying a user associated with the Mobile IP session, ([0033]; mobile user network access identifier [NA1]),and a session identifier identifying a session associated with the user to be terminated by the first PDSN. ([0042] : The token is an identifier for the session established by the NAI)

As per claim 45, Chowdhury discloses a non-transitory computer-readable medium storing thereon computer-readable instructions for initiating the release of resources in a first Packet Data Serving Node (PDSN) at a AAA server, comprising:

instructions for processing by the AAA server an access request message received from a second PDSN, ([0035]; Figure 2: item 216) instructions for sending by the AAA server an access accept message to the second PDSN in response to the access request message; and ([0037]; Figure 2: item 224)

the access request message including a username identifier identifying a user ([0033]; mobile user network access identifier [NA1])of a Mobile Node supporting Mobile IP, ([0013]; mobile station initially registered with the old NAS to establish the mobile IP session)a session identifier identifying a session associated with the user, ([0042] : The token is an identifier for the session established by the NAI) and a PDSN identifier identifying the first PDSN; ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

instructions for sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) independent of expiration of a PPP session timer, ([0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer) wherein the disconnect request message is sent to the first PDSN prior to expiration of the PPP session timer, the disconnect request message triggering the release of resources associated with the session; wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released independent of and prior to expiration of a PPP session timer; ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226, 0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer)

wherein the resources comprise memory ([0050])and wherein the session is a PPP session([0052]; PPP connection)

Chowdhury fails to disclose wherein the first PDSN sends a disconnect acknowledgement message to the AAA server indicating that the first PDSN has

successfully disconnected the user when the first PDSN has released the resources. Jones discloses wherein the first PDSN sends a disconnect acknowledgement message to the AAA server indicating that the first PDSN has successfully disconnected the user when the first PDSN has released the resources. (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Chowdhury to disclose wherein the first PDSN sends a disconnect acknowledgement message to the AAA server indicating that the first PDSN has successfully disconnected the user when the first PDSN has released the resources. The motivation for doing do would have been to trigger the generation of the appropriate accounting records and/or termination of a stale data session. (Col 3 lines 11-20)

As per claim 46, Chowdhury discloses a AAA server adapted for initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

a processor; and ([0049]; processor)

a memory, at least one of the processor or the memory being adapted for:
([0049]; memory)

receiving by the AAA server an access request message from a second PDSN,
([0035]; Figure 2: item 216) the access request message including a username identifier

((0033]; mobile user network access identifier [NA1])identifying a user of a Mobile Node supporting Mobile IP, ((0013]; mobile station initially registered with the old NAS to establish the mobile IP session) a session identifier identifying a session associated with the user, ((0042] : The token is an identifier for the session established by the NAI) and a PDSN identifier identifying the first PDSN; ((0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

sending by the AAA server an access accept message to the second PDSN in response to the access request message; and ((0037]; Figure 2: item 224)

sending by the AAA server a disconnect request message to the first PDSN indicating a request to release resources associated with the session ((0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) prior to expiration of a PPP session timer; wherein the resources are released prior to expiration of a PPP session timer; ((0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226, 0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer)

wherein the resources comprise memory ((0050)) and wherein the session is a PPP session. ((0052]; PPP connection)

Chowdhury fails to disclose wherein the first PDSN sends a disconnect non-acknowledgement message to the AAA server when the first PDSN is unable to disconnect the user and release the resources associated with the session when the first PDSN; wherein the first PDSN sends a disconnect acknowledgement message when the first PDSN releases the resources associated with the session in response to receiving the disconnect request message.

Jones discloses wherein the first PDSN sends a disconnect non-acknowledgement message to the AAA server when the first PDSN is unable to disconnect the user and release the resources associated with the session when the first PDSN; wherein the first PDSN sends a disconnect acknowledgement message when the first PDSN releases the resources associated with the session in response to receiving the disconnect request message. (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) At the time the invention was made, it would have obvious to modify Chowdhury to disclose wherein the first PDSN sends a disconnect non-acknowledgement message to the AAA server when the first PDSN is unable to disconnect the user and release the resources associated with the session when the first PDSN; wherein the first PDSN sends a disconnect acknowledgement message when the first PDSN releases the resources associated with the session in response to receiving the disconnect request message. The motivation would have been to trigger

the generation of the appropriate accounting records and/or termination of a stale data session. (Col 3 lines 11-20)

As per claim 49, Chowdhury / Jones disclose the PDSN as recited in claim 44, and Chowdhury discloses wherein the disconnect request message is not received from another PDSN. ([0013]; directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226)

Claims 31-35, 37, 39, 41 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chowdhury (US 2004/0022212) in view of Raman et al. – hereinafter Raman (US 2004/0018829).

As per claim 31, Chowdhury discloses in a first AAA server, a method of initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

the access accept message including a username identifier identifying a user, ([0033]; mobile (user network access identifier [NA1])) of a Mobile Node supporting Mobile IP, ([0013]; mobile station initially registered with the old NAS to establish the mobile IP session) a session identifier identifying a session associated with the user, ([0042] : The token is an identifier for the session established by the NAI) and a PDSN

identifier identifying the first PDSN; ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration) and

sending by the first AAA server a disconnect request message to the PDSN identifier identifying the first PDSN, ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) the disconnect request message indicating a request to release resources associated with the session, ([0013], [0048]; [0052]; Figure 7: item 706) wherein the disconnect request message is sent to the PDSN independent of whether a PPP session timer has expired; ([0033]; FIG. 2 generally illustrates a solution that takes advantage of an AAA server's knowledge of the current PDSN (NAS address) for a mobile user (network access identifier [NAI]); [0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer) and prior to the expiration of a PPP timer ([0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer)

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, ([0048]; [0052]; Figure 7: item 706) wherein the resources are released independent of expiration of a PPP session timer; ([0033]; FIG. 2 generally illustrates a solution that takes advantage of an AAA server's knowledge of the current PDSN (NAS address) for a mobile user (network

access identifier [NAI]); [0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer) and prior to the expiration of a PPP timer ([0052]; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer)

Chowdhury fails to disclose receiving by the first AAA server an access accept message from a second AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the node. Raman discloses receiving by the first AAA server an access accept message from a second AAA server. ([0251]; When roaming on a foreign or visited network 146, mobile node 78 may be in communication with RAN 183. In turn, the RAN 183 may be in communication with PDSN 178. PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191. Communications between the HAAA 191 and BAAA 201 may be sent according to the DIAMETER protocol, as well as other protocols ; [0268]; the BAAA 201 sends a DIAMETER Auth-Request message for the to the HAAA 191 over the secure link. The DIAMETER Auth-Request message may request prepaid billing information from the user profile for the wireless mobile node -[0269] The HAAA 191 queries the user profile (either locally or in a remote data store), and if eligible for wireless prepaid service, the HAAA 191 sends to the BAAA 201 an Auth-Accept message)

wherein the first AAA server is a visited AAA server associated with a foreign network([0251], "PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191", Figure 2: item 226) wherein the second AAA server is a home AAA server associated with a home network of the node ([0251], HAAA 191)

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify Chowdhury to disclose receiving by the first AAA server an access accept message from a second AAA server, wherein the first AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the node. The motivation would have been to replenish used credit and purchase new credits for prepaid services by the PDSN. ([0270])

As per claim 32, please see the discussion under claim 22 as similar logic applies.

As per claim 33, please see the discussion under claim 23 as similar logic applies.

As per claim 34, Chowdhury / Jones disclose the method as recited in claim 33 and Chowdhury discloses wherein the node is a mobile node. ([0038])

As per claim 35, please see the discussion under claim 25 as similar logic applies.

As per claim 37, please see the discussion under claim 27 as similar logic applies.

As per claim 39, Chowdhury / Raman disclose the method as recited in claim 37. receiving by the AAA server a disconnect acknowledgement message from the first PDSN indicating that the first PDSN has successfully disconnected the user. ([0053]; Figure 7: item 708)

As per claim 41, Chowdhury / Raman discloses the method as recited in claim 31. Raman discloses wherein the disconnect message is sent when the access accept message is received by the first AAA server. ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226)

As per claim 47, Chowdhury discloses a non-transitory computer-readable medium storing thereon computer-readable instructions for initiating the release of resources in a first Packet Data Serving Node (PDSN) at a AAA server, comprising:

the access accept message including a username identifier identifying a user, ([0033]; mobile user network access identifier [NA1]) of a Mobile Node supporting Mobile IP ([0013]; mobile station initially registered with the old NAS to establish the mobile IP session), a session identifier identifying a session associated with the user, ([0042] : The token is an identifier for the session established by the NAI) and a PDSN

identifier identifying the first PDSN; ([0010] PDSN, provides its IP address (care-of address) to the HA during mobile station registration)

instructions for sending by the AAA server a disconnect request message to the PDSN identifier identifying the first PDSN, wherein the disconnect request message is sent to the first PDSN ([0013]; a disconnect request signal either to the new NAS (for delivery to the old NAS) or directly to the old NAS to prompt the old NAS to release IP session resources allocated for the mobile station; Figure 2: item 226) prior to expiration of a PPP session timer, the disconnect request message triggering the release of resources associated with the session, the disconnect request message indicating a request to release resources associated with the session such that the first PDSN releases the resources prior to expiration of the PPP session timer; ([0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer, [0048]; [0052]; Figure 7: item 706)

wherein the first PDSN releases the resources associated with the session in response to receiving the disconnect request message, wherein the resources are released prior to expiration of a PPP session timer; ([0052; Unless released according to the method of the present invention, the resources allocated to the MS by the old PDSN will be reserved until the expiration of a lifetime timer or a registration timer, [0048]; [0052]; Figure 7: item 706)

wherein the resources comprise memory([0050]) and wherein the session is a PPP session ([0052]; PPP connection)

Chowdhury fails to disclose instructions for processing by the AAA server an access accept message received from a second AAA server, wherein the AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node. Raman discloses instructions for processing by the AAA server an access accept message received from a second AAA server, ([0251]; When roaming on a foreign or visited network 146, mobile node 78 may be in communication with RAN 183. In turn, the RAN 183 may be in communication with PDSN 178. PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191. Communications between the HAAA 191 and BAAA 201 may be sent according to the DIAMETER protocol, as well as other protocols ; [0268]; the BAAA 201 sends a DIAMETER Auth-Request message for the to the HAAA 191 over the secure link. The DIAMETER Auth-Request message may request prepaid billing information from the user profile for the wireless mobile node -[0269] The HAAA 191 queries the user profile (either locally or in a remote data store), and if eligible for wireless prepaid service, the HAAA 191 sends to the BAAA 201 an Auth-Accept message)

wherein the AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node. ([0251], PDSN 178 is in communication with the BAAA 201, which in turn may be in communication with a HAAA 191, Figure 2: item 226)

At the time the invention was made, it would have obvious to modify Chowdhury to disclose instructions for processing by the AAA server an access accept message received from a second AAA server, wherein the AAA server is a visited AAA server associated with a foreign network, wherein the second AAA server is a home AAA server associated with a home network of the Mobile Node. The motivation would have been to to replenish used credit and purchase new credits for prepaid services by the PDSN. ([0270])

As per claim 48 discloses similar limitations as claim 47. Chowdhury discloses further a AAA server adapted for initiating the release of resources in a first Packet Data Serving Node (PDSN), comprising:

a processor; and ([0049]; processor)

a memory, ([0049]; memory)

Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chowdhury (US 2004/0022212) / Raman (US 2004/0018829) further in view of Jones (US 7,441,269)

As per claim 40, Chowdhury / Raman disclose the method as recited in claim 37. Chowdhury fails to disclose further comprising: receiving by the first AAA server a disconnect non-acknowledgement message from the first PDSN indicating that the first PDSN is unable to disconnect the user. Jones discloses further comprising: receiving

by the first AAA server a disconnect non-acknowledgement message from the first PDSN indicating that the first PDSN is unable to disconnect the user. (Col 11 lines 7-12; For disconnecting the stale sessions, the Diameter equivalent of the RADIUS Disconnect-Request, Disconnect-ACK and Disconnect-NAK messages are the Abort-Session-Request and Abort-Session-Answer messages) At the time the invention was made, it would have obvious to modify Chowdhury to disclose receiving by the first AAA server a disconnect non-acknowledgement message from the first PDSN indicating that the first PDSN is unable to disconnect the user. The motivation would have been to trigger the generation of the appropriate accounting records and/or termination of a stale data session. (Col 3 lines 11-20)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag R Patel whose telephone number is (571)272-7966. The examiner can normally be reached on Monday to Friday from 8:00AM to 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn, can be reached on (571) 272-1915.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pairedirect.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/C. P./
Examiner, Art Unit 2454

/Joseph E. Avellino/
Supervisory Patent Examiner, Art Unit 2454